

# Potentials and constraints of modeling for transdisciplinary co-producing strategies for sustainable water governance

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Centre for Development and Environment (CDE), University of Bern  
Hallerstrasse 12, 3012 Bern (flurina.schneider@cde.unibe.ch)

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Both climate change and socio-economic development will significantly modify the supply and consumption of water in future. Consequently, regional development has to face aggravation of existing or emergence of new conflicts of interest. In this context, transdisciplinary co-production of knowledge is considered as an important means for coping with these challenges.

Accordingly, the MontanAqua project aims at developing strategies for more sustainable water management in the study area Crans-Montana-Sierre (Switzerland) in a transdisciplinary way. It strives for co-producing system, target and transformation knowledge among researchers, policy makers, public administration and civil society organizations.

The research process basically consisted of the following steps: First, the current water situation in the study region was investigated. How much water is available? How much water is being used? How are decisions on water distribution and use taken? Second, participatory scenario workshops were conducted in order to identify the stakeholders' visions of regional development. Third, the water situation in 2050 was simulated by modeling the evolution of water resources and water use and by reflecting on the institutional aspects. These steps laid ground for jointly assessing the consequences of the stakeholders' visions of development in view of scientific data regarding governance, availability and use of water in the region as well as developing necessary transformation knowledge.

During all of these steps researchers have collaborated with stakeholders in the support group RegiEau. The RegiEau group consists of key representatives of owners, managers, users, and pressure groups related to water and landscape: representatives of the communes (mostly the presidents), the canton (administration and parliament), water management associations, agriculture, viticulture, hydropower, tourism, and landscape protection.

The aim of the talk is to explore potentials and constraints of scientific modeling of water availability and use within the process of transdisciplinary co-producing strategies for more sustainable water governance.